

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-59. (canceled)

60. (previously presented): A method for measuring film thickness comprising:
irradiating light onto a pattern formed on a wafer having an n optically transparent thin film;
detecting light reflected from said wafer;
using spectral waveform data of the detected reflected light, determining plural measurement points on said wafer by frequency analysis or fitting for measuring the film thickness; and
measuring the film thickness at the measurement points, by successively irradiating light onto the measurement points.

61. (previously presented): The method of claim 60 wherein in the step of determining plural measurement points, the measurement points are determined by using information obtained by frequency analysis of the spectral waveform data of the reflected light.

62. (previously presented): The method of claim 61 wherein the measurement points are determined by using information for a high-frequency component intensity and a low-frequency component intensity, each obtained by frequency analysis of the spectral waveform data of the reflected light.

63. (previously presented): The method of claim 61 wherein, in the step of determining plural measurement points, the measurement points are determined by using information for waveform periodicity of the spectral waveform data.

64. (previously presented): The method according to claim 60 wherein the plural measurement points are determined by using information obtained by comparing the spectral waveform data with theoretical waveform data.

65. (new): The method according to claim 64, wherein the theoretical waveform data is calculated by using a boundary structure model in which the light reflected from a pattern is mixed with the light reflected from a layer below the pattern.